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ABSTRACT

This collection contains papers, study reports, and research abstracts related primarily to community and junior college education in Texas. Section I, which presents institutional studies, papers, and reports, provides: (1) an analysis of probation and suspension at Amarillo College (AC); (2) results of a survey conducted to develop an administrator/faculty evaluation questionnaire at AC; (3) an analysis of mini-terms in Texas public community colleges; (4) a comparison of attitude changes in introductory biology students with their ratings of instruction; (5) a description of a San Antonio College project to develop an effective method of student placement; and (6) a survey of computer-assisted instruction at Temple Junior College. Section II presents abstracts of research dealing with biology student attitudes, career guidance, human service organization management, perceptions of the college environment, student retention, performance behaviors of deans and chairpersons, spending patterns and revenue sources of community colleges, college marketing strategies, personal skills and clinical performance evaluation, part-time instructors and student retention, staff development in community colleges, the roles of deans of instruction, and the structure of math anxiety. The final sections present titles of dissertations and theses completed at Texas A & M University in 1981-82, and suggested Texas Association of Junior and Community College Instructional Administrators research topics. (HB)

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JUNIOR AND COMMUNITY COLLEGE RESEARCH

TEXAS, 1982 - 1983

THE 1983 RESEARCH REPORT TO THE TEXAS ASSOCIATION OF JUNIOR AND COMMUNITY COLLEGE INSTRUCTIONAL ADMINISTRATORS

BY

THE RESEARCH COMMITTEE

JUNE, 1983

VC 830 436

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ACKNOWLEDGEMENT

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PREFACE

The Research Committee of the Texas Association of Junior and Community College Instructional Administrators was very active during the 1982-1983 academic year. Dr. Glen Bounds chaired a sub-committee which revised the faculty status survey instrument. This form was distributed in February to all two year, Texas colleges. Dr. Jim Tunnell of East Texas State University volunteered again to compile the data for a report scheduled for the Summer Conference in June.

Suggestions for research topics were solicited from the membership in attendance at the 1982 Summer Conference. The topics were placed in selected categories and are included in this report.

The Research Committee requested that all papers and abstracts be submitted to the Committee Chairman by February 1. This permitted a sub-committee to meet during the Mid-Winter Conference for the purpose of reviewing and selecting research reports to be included in the annual publication. The work of the Review Committee, composed of both Community College and University representatives, is greatly appreciated.

The committee wishes to express appreciation to all contributors. The report this year again reflects research activities that have been conducted within the local institutions as well as those conducted in our universities.

The Research Committee wishes to extend special thanks to the Association of Former Students of Texas A&M University for the $2,000.00 endowment that was given to TAJCCIA specifically for research activities.

Our gratitude is also extended to Doctors Glenn Johnson and Bob Stalcup of Texas A&M University for being the architects of this endowment.

Noel H. McCoy, Chairman
Research Committee

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I

INSTITUTIONAL STUDIES, PAPERS AND REPORTS

AN ANALYSIS OF PROBATION AND SUSPENSION RATES AT AC

by

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Amarillo College

AN ANALYSIS OF PROBATION AND SUSPENSION RATES AT AC

During the 1981-82 year, Amarillo College decided to modify its probation and suspension policies, effective fall semester, 1982. Prior to fall, 1982, students enrolled in fewer than 9 hours were not considered by either policy. Students enrolled in 9 or more hours were placed on probation whenever their semester grade point average (GPA) dropped below 1.5 on a 4.0 scale. Students who earned GPA's of less than 1.5 two semesters in a row were placed on suspension.

Beginning fall, 1982, the probation and suspension policies were applied to all students. In addition students earning a GPA of less than 1.75 were to be placed on probation. All students who earned GPA's of less than 1.75 for two consecutive semesters were to be placed on suspension.

At the end of fall, semester, 1982, 21.8 percent of all students who completed the semester were placed on probation or suspension (1,119 out of 5,132 students). As a result, the decision was made to investigate this situation. Hopefully a pattern would emerge which would help instructors and advisors spot such students in advance. If this could be accomplished, steps could be taken to help these students overcome their difficulties.

In the following paragraphs, a number of student groups will be discussed. The percentage of students in good standing in each group will be presented.

THE DIVISIONS

The following table shows the divisions in alphabetical order. Students are placed in a division on the basis of their majors. In addition to the percentage of students in good standing, the percent on probation and the percent suspended are given.

TABLE I

Division	Number of Students	% in Good Standing	% on Proba-tion	% Sus-pended
Allied Health	237	81.4	16.9	1.7
Behavioral Science	414	77.5	21.0	1.2
Biology	197	74.1	24.4	1.5
Business	1,448	80.7	17.3	1.9
Eng. Sci. & Tech.	363	78.5	19.0	2.2
Fine Arts	139	81.3	18.0	0.7
Indus. Ed.	237	77.2	20.7	1.3
Language Arts	20	90.0	10.0	0.0
Pending (LDC)	1,311	77.7	20.7	1.4
Mass. Comm.	152	73.0	22.4	4.6
Nursing	435	78.9	18.2	3.0
AC TOTAL	*5,132	78.2	19.8	1.9

*Column entries do not total 5,132 because some majors are not classified into divisions.

Mass Communications has the lowest percentage of students in good standing; Language Arts has the highest. The range, however, is not very large, and it is probably not a worthwhile predictive factor.

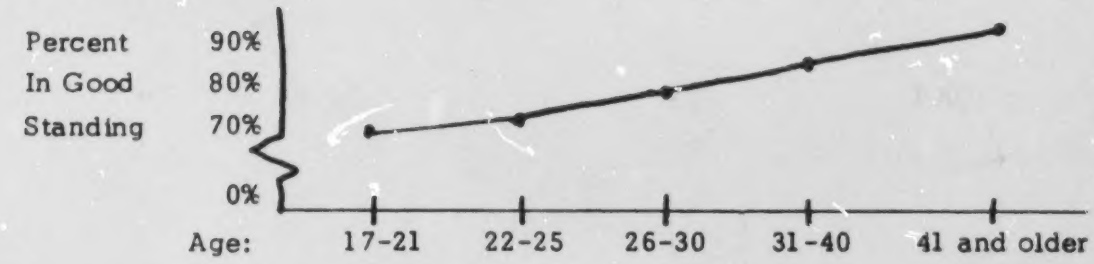
STUDENT FACTORS

A number of student factors are detailed below. Due to the results, some are more useful than others in spotting students with potential academic difficulties.

AGE

The following graph shows the relationship between age and good standing.

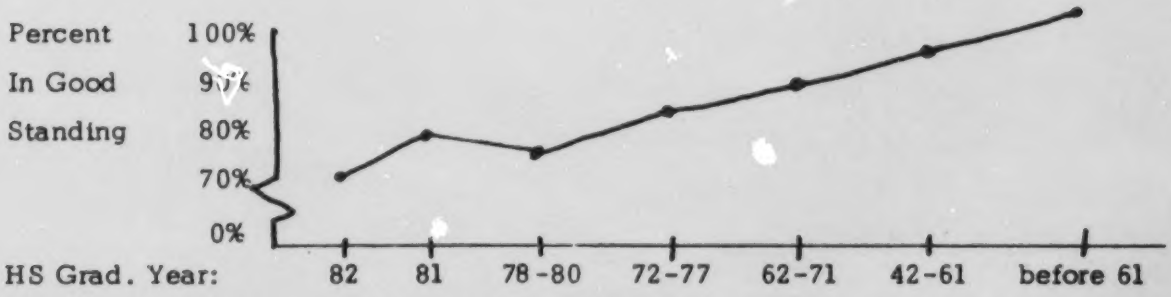
Age



Note that in general, older students are more likely than younger students to be in good standing. The range is 70 percent for 17 to 21 year olds to 90 percent for those 41 and older.

High School Graduation Date

High School graduation day is closely related to age, and, as expected, we find similar relationship here.



The range is from 69 percent for the '82 class to 97 percent for those who graduated before 1961. The slight drop of the 78-80 classes from the level achieved by the 1981 class might be due to being out of school for an extended period; however, no evidence has been collected on this point. Since the drop is only 3.4 percent, it is certainly negligible. In general, students from earlier high school classes do better academically (other evidence

exists to demonstrate this in terms of G.P.A. as well) than students from more recent high school classes. Are they more motivated? Did they have a better high school preparation? Clearly the performance difference occurs--we need to understand why, especially when nearly a third of the 1982 graduating class was placed on probation or suspended.

SCREENING TESTS

AC currently used the Nelson Denny Reading Test, the ACT English score, the SAT Verbal score, and high school average to assess the academic potential of first-time college students. The students are placed into 3 categories, detailed in the following tabulation.

	% In Good Standing
Those reading at or above the 13th grade level	83
Those reading between the 9th and 12th gradel level	64
Those reading at or below the 8th gradel level	61

Clearly students reading at or above the 13th grade level perform better academically than other students do.

HIGH RISK STUDENTS

AC has three categories of high risk students--those with reading difficulties, those whose native language is not English, and those with physical handicaps. The following tabulation shows the percentage of each group in good standing at the end of Fall 1982.

Group	Description	Number of Students	% In Good Standing
1	Those with current reading difficulties	152	54
2	Those with current English lang. difficulties	155	59
3	Those with physical handicaps	67	75
4	Those who overcame reading difficulties	100	78
5	Those who overcame Engl. lang. difficulties	23	78
6	All AC students	5,132	78

All students in group 5 have successfully completed the ACcess ESL program, and most of those in group 4 successfully completed the ACcess reading program. Clearly both groups are now able to compete successfully with students who never had such problems. All students in group 2 are in ESL courses, and most of those in group 1 are in appropriate ACcess reading classes. Students who complete the program are prepared for normal college academic work.

FIRST TIME STUDENTS

Seventy-four percent of all first time students are in good standing. Eighty one percent of all continuing students are in good standing. The difference is probably not large enough to be important, since most of the difference is accounted for by the poor performance of students who graduated from high school in 1982.

EDUCATIONAL OBJECTIVE

When students complete applications to enroll at AC, they choose one of five educational objectives as best describing their educational goals. These range from obtaining a degree to earning transfer credits to meeting personal and job interests. No differences were found among students with different objectives in terms of academic standing. From other studies, however, we know that the objective chosen is related to retention.

HOURS ATTEMPTED AND LATE REGISTRATION

Both hours attempted during fall, 1982, and late registration are related to academic standing, and they interact together as well. The following tabulation illustrates this.

Hours Enrolled Fall, 1982	All Students % In Good Standing	Reg/Pre Registrants % In Good Standing	Late Registrants % In Good Standing
All Students	78.2	79.4	70.4
1-3	77.3	77.5	76.6
4-6	74.7	76.2	65.9
7-11	75.9	77.4	64.1
12-15	83.4	84.7	61.1
16 and up	88.8	89.5	75.0

In general, the more hours all students take the higher the percentage in good standing. In addition, a higher proportion of those who enrolled during regular or pre-registration than of those who enrolled during late registration are in good standing. However, a very strong interaction exists. In general, taking more hours leads to a higher proportion of students in good standing among those who did not enroll during late registration. For those who did enroll during late registration (except for the 12 students who took 16 or more hours), taking more hours leads to a lower proportion of students in good standing.

CONCLUSION

Several conclusions and/or recommendations can be drawn.

1. Use of the ACcess program by those students who need its services is beneficial. From other data the ACcess tutoring services and study skills workshops can be recommended as well, when instructors spot students experiencing academic difficulty during the semester.
2. Show late registrants the chart illustrating the relationship between registering late and enrolling for a large number of hours. Encourage late registrants to consider carefully the demands which will be placed on their time, and the cost of failure (in terms of money, time wasted, financial aid, emotional stress, and the effect of possible suspension).

3. Attempt to determine why, in general, older students are more successful than younger students. This might be a good topic for a mini-grant.

4. Continue to use screening tests with all first-time college students. Encourage all students whose reading level is less than grade 13 to consider taking a reading improvement course prior to enrolling in a course with substantial reading requirements.

RESULTS OF THE EVALUATION QUESTIONNAIRE

by

DR. STANLEY I. ADELMAN
DR. R. EUGENE BYRD

Amarillo College

RESULTS OF THE EVALUATION QUESTIONNAIRE

In the fall of 1981, as a part of an ongoing extensive committee project to develop a faculty and administrator evaluation program at Amarillo College, a survey was made of practices in other colleges. Colleges selected for inclusion were those identified in the National Association of College and University Business Officers 1980-81 report as being peer institutions of Amarillo College. Ninety peer colleges were determined on the basis of enrollment, type of school and budget. Responses were received from 58 percent of the institutions surveyed.

This summary will first address the question of faculty evaluation. Then administrator evaluation results will be presented. Finally, a brief conclusion will highlight some of the differences between colleges whose academic dean is satisfied with the evaluation procedures and colleges whose academic dean is not satisfied.

The table at the end of this paper has two sections. Section I presents information on faculty evaluation; section II contains information about administrator evaluation.

FACULTY EVALUATION

Fifty of the responding institutions conduct an evaluation of faculty members (95%). Sixty-three percent are satisfied with those procedures. On a scale of 1 (Dissatisfied) to 6 (Satisfied), academic deans at institutions conducting faculty evaluations rated the satisfaction level as 3.82. Twenty percent of the schools incorporate merit pay in the evaluation process.

The deans were asked to list those participating in the process. Student evaluations were used at 80 percent of the institutions; peer evaluations at 42 percent; department/division chairperson ratings were used at 88 percent of the schools; self ratings were incorporated at 54 percent of the institutions; and 16 percent of the institutions incorporated ratings of others.

Thirty percent of those institutions satisfied with their process incorporated merit pay; only 6 percent of the dissatisfied institutions used merit pay. Division/department chairperson evaluations were used at 97 percent of the satisfied institutions; they were used at only 67 percent of the dissatisfied schools. Student evaluations were used at 60 percent of the satisfied institutions; they were used at 83 percent of the institutions whose academic dean expressed dissatisfaction. Peer evaluations were used at 30 percent of the satisfied colleges; they were used at 61 percent of the dissatisfied. Ninety-three percent of the satisfied institutions also had an administrator evaluation process; only 78 percent of the dissatisfied institutions had one.

ADMINISTRATOR EVALUATION

Forty-five of the responding institutions conduct an evaluation of administrators (87%). Sixty-four percent are satisfied with those procedures. On the scale of 1 (dissatisfied) to 6 (satisfied), academic deans at institutions conducting administrator evaluations rated the satisfaction level as 3.83. Thirty-eight percent of the schools incorporate merit pay in the evaluation.

The deans were asked to list those participating in the process. Faculty evaluations were used at 29 percent of the institutions; peer evaluations at 31 percent; department/division chairperson ratings were incorporated at 29 percent of the schools; self ratings were used at 38 percent of the institutions; and 96 percent of the colleges used supervisor ratings.

Forty-six percent of those institutions satisfied with their process incorporated merit pay; only 31 percent of the dissatisfied institutions used merit pay. Eighty-nine percent of the satisfied institutions used supervisory ratings; 88 percent of the institutions whose academic dean expressed dissatisfaction did. Forty-six percent of the satisfied schools used faculty ratings; only 19 percent of the dissatisfied instituions did. Ninety-six percent of the satisfied institutions also had faculty evaluations; 94 percent of the dissatisfied schools did.

CONCLUSIONS

Merit pay appears to improve satisfaction for both administrators and faculty evaluations.

Using self ratings improves satisfaction with administrator evaluation; using department/division chairperson ratings improves satisfaction with faculty evaluations. Use of peer ratings for faculty is assoqiated with dissatisfaction. However, it is associated with satisfaction when used with administrators. Student ratings of faculty are associated with dissatisfaction.

Institutions evaluating both faculty and administrators appear to be more satisfied with the process than are institutions which evaluate only one or the other.

RESULTS OF THE EVALUATION QUESTIONNAIRE

I. FACULTY EVALUATION

	All Schools	Deans Satisfied	Deans Dissatisfied
% with Faculty Evaluation	95	--	--
% Satisfied	63	--	--
Average Rating	3.82	--	--
% using merit pay	20	30	6
Percent using:			
Student Evaluations	80	60	83
Peer Evaluators	42	30	61
Chairperson Evaluators	88	97	67
Self Evaluations	54	53	50
Other Evaluators	20	17	28
% with Administrative Evaluation	88	93	78

II. ADMINISTRATOR EVALUATION

% with Administrative Evaluation	87	--	--
% Satisfied	64	--	--
Average Rating	3.83	--	--
% using merit pay	38	46	31
Percent using:			
Faculty Evaluators	29	43	19
Peer Evaluators	29	32	25
Division/Department Cha. Eval.	29	39	13
Self Evaluation	38	46	13
Supervisory Evaluators	89	89	88
% with Faculty Evaluation	95	96	94

AN ANALYSIS OF MINI-TERMS IN TEXAS PUBLIC COMMUNITY/JUNIOR COLLEGES

by

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AN ANALYSIS OF MINI-TERMS
IN TEXAS PUBLIC COMMUNITY/JUNIOR COLLEGES

ABSTRACT

"An Anaylsis of Mini-Terms in Texas Public Community/Junior Colleges" examines the current state of mini-terms in the Texas public community/ junior colleges. The information for this article was obtained from a survey of all public two-year colleges in Texas. In addition to a discussion of the number of institutions conducting mini-terms, this article discusses the number of days in the mini-term, the length of a class meeting, the more popular courses in mini-terms, and the primary means of advertising mini-terms. This article also views the student market for mini-terms.

AN ANALYSIS OF MINI-TERMS IN TEXAS PUBLIC COMMUNITY/JUNIOR COLLEGES

Non-traditional forms of education have always sparked interest on the part of educatiors. While the idea of mini-terms is not new, concentrated course offerings in short periods of time have received considerable attention in the realms of higher education recently. This study examines the current status of mini-terms in the public community/junior colleges of this state.

In January, 1983, a survey of the current status of mini-terms in the public two-year colleges of Texas was conducted. Fifty-six surveys were mailed and 53 were returned which indicated an unusually high response of 94.64%. This response was significant at the .05 level.

Thirty-nine of the 53 institutions responding (73.58%) indicated that they had no mini-terms. Three institutions had conducted mini-semesters in the past but are not presently doing so. One institution is considering instituting a mini-term in the future. Three community colleges offer abbreviated mini-semesters of eight week blocks, primarily to serve their military constituents.

Fourteeen colleges do conduct mini-terms between semesters. These fourteen colleges represent 26.42% of the total institutions. Of the respondents only eight institutions conduct mini-terms between the fall and spring semesters. Nine institutions offer a mini-term between the spring and summer semesters. Of these totals, three institutions offer mini-terms at both time frames. Two colleges offered mini-terms at semester breaks and at times other than those indicated above.

A wide variation was noted in both the number of class meetings and the amount of time per class meeting. Class meetings ranged from eight in number to twenty and ranged in time per class meeting from five hours and fifteen minutes to two hours and thirty minutes. This study suggested that a mini-semester with approximately fifteen meetings (three weeks) was the most common with just

a few minutes over three hours being the optimum class length. For the mini-semesters conducted between the fall and spring terms, the response would indicate that the first week of the mini-term should be conducted before January 1. Such a calendar appears to be preferable to beginning the spring semester a week later than suggested by the common calendar or reducing the number of class meetings below fifteen.

The number of courses offered in the various mini-terms ranged from one to 22. Nine institutions offered six or less courses while five colleges offered ten or more courses. The average number of course offerings was 9.33 courses per institution.

Respondents indicated that 86.07% of all courses offered had sufficient enrollment to be offered. Five colleges had 100% of their course offerings make while only one institution had less than 50% of its course offerings fail to make. Such data suggest that mini-terms are valid components of the college schedule.

Class enrollments in mini-semester offerings ranged from ten to more than fifty with the average number enrolled being approximately twenty per class. The most commonly reported figure per class was fifteen.

Surveys indicated a definite trend in courses offered and the popularity of the courses offered. American Government was the most popular course offered followed by American History. These two courses were followed in order by English Literature, English Composition, and Introduction to Psychology. While several other courses were offered in the mini-semester settings, Sociology appeared to be the next most significant course offering following the five above-mentioned courses. No other course offerings below these six appeared significant.

By far the most popular means of advertising mini-terms were newspapers.

Following newspaper advertising, printed schedules, campus publications, word of mouth and in class announcements, radio brochures, and bulletin boards were the next most oftenly used means of advertising mini-terms.

College administrators indicated that mini-terms served a significant number of students not otherwise associated with their college. Interpreting these data means that many students home from senior colleges and universities availed themselves of the mini-terms. For college administrators who are always concerned about college-community relationships, the mini-term may well serve an excellent purpose. Students in mini-terms are frequently individuals not normally enrolled in the public two-year college; hence, community colleges may well have found another market to serve.

An analysis of the locations and characterisitics of colleges offering mini-terms reveals fairly even regional and urban-rural dispersions. Six (40%) of the colleges offering mini-terms serve primarily rural areas while eight (60%) serve primarily urban areas. In addition, the geographic locations of the institutions reveal that mini-terms are offered throughout the state and are not exclusive to any one region of Texas or to any one population segment.

Some educators will argue that mini-terms offer "watered down" courses. Others vehemently deny this saying that the kind of course offered is determined by the instructor. This survey suggests that mini-terms do have a place in higher education in Texas. The prudent use of course offerings with capable instructors operating within the context of the mini-term can be very valuable to the institution and more importantly to the students served by that institution.

AN ANALYSIS OF MINI-TERMS
IN TEXAS PUBLIC COMMUNITY/JUNIOR COLLEGES

TABLE I

PATTERN OF RESPONSE

	Number of Institutions
Do not offer mini-term semester	39 (75.58%)
Offered previously, not at present	3
Considering mini-term for future	1
Offer "mini-terms" during regular semester	3
Conduct mini-terms between semesters	14 (26.42%)
Mini-terms between Fall and Spring semesters only	5
Mini-terms between Spring and Summer semesters only	6
Mini-terms between Fall and Spring, Spring and Summer	3
Mini-terms offered at breaks and additional times	2

TABLE II

ORGANIZATIONAL PATTERNS

Number of Institutions	Number of Class Sessions	Time Per Session
1	8	5 hrs. 15 min.
4	10	5 hrs.
3	12	4 hrs.
4	15	3 hrs. 15 min.
1	16	3 hrs.
1	20	2 hrs. 30 min.

Mean of Sessions - 13.5 Mean Time of Session - 3 hrs. 50 min.

Mode of Sessions - 15 Mode Time of Session - 3 hrs. 15 min.

TABLE III

CURRICULUM SIZE

Number of Institutions	Number of Courses Offered
2	1 - 2
1	3
2	4
3	5
1	6
2	10
1	12
1	20
1	22

Mean - 9.33

TABLE IV

MOST POPULAR MINI-TERM COURSES

1. Government
2. History
3. English Literature
4. English Composition
5. Introduction to Psychology

TABLE V

PRIMARY MEANS OF ADVERTISING MINI-TERMS

1. Newspapers
2. Printed Schedules
3. Campus Publications
4. Word of Mouth/in-class Announcements
5. Radio
6. Brochures and Bulletin Boards

A COMPARISON OF ATTITUDE CHANGES IN STUDENTS OF INTRODUCTORY BIOLOGY WITH THEIR RATINGS OF INSTRUCTION

by

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ABSTRACT

A study was conducted to determine if student attitude changes toward biology were affected by the instructor and to determine if any such changes could be detected by items on the student evaluation. Six groups of introductory biology students were given a test that measured their attitude toward biology during the first and last weeks of the semester. It was determined that there was change in attitude. The degree of attitude change was then correlated against the class ratings of instruction in four major areas (organization/clarity, stimulation, rapport and achievement). There was a strong positive correlation in all areas. The correlations obtained for the areas of organization/ clarity, rapport and achievement were all statistically significant. The results are discussed in relation to other studies which have correlated both ratings and attitude with examination performance

INTRODUCTION

One of the most widely utilized tools for the assessment of teaching ability is the student evaluation of instruction. It would seem obvious that the student as the primary consumer of instruction should be in the best position to evaluate how effective that instruction has been. It is also obvious that if the student evaluation is to have any validity it should correlate in a positive manner with student learning. To this end a number of studies have been done in which student ratings of instruction have been correlated with performance on achievement examinations. The correlations in these studies have ranged from highly negative (12) to highly positive (1, 3, 11, 17). Reviewers of such studies have generally concluded that there exists a positive correlation between student evaluations of instruction and student performance on achievement examinations although there is some disagreement as to how strong the correlation is (2, 8).

A gain in subject knowledge is not the only objective that an instructor may have for a given course. A change in attitude toward the subject matter may be just as important and in some cases more important than an achievement of factual knowledge about the subject. These two objectives are not mutually exclusive and several studies indicate that a positive attitude toward the subject is positively correlated with achievement in the subject (7, 13, 15). The development of positive attitudes toward the subject is an especially desirable goal in introductory biology where environmental sensitivity and an appreciation for life are almost always course objectives. It is certainly desirable to be able to measure a teacher's impact in achieving these objectives.

The current study was undertaken to investigate the effect of individual instructors on the attitude change undergone by students in introductory biology. Two questions were examined. They are (1) does the instructor's influence affect the attitude of the class towards the subject and (2) if there is an attitude change can it be indicated by student evaluation items which correlate positively with student knowledge gain.

METHODS

During the first week of the fall semester the Biology Attitude Test as utilized by Hubbard (7) was administered to the introductory biology classes of six different instructors at San Antonio College. This test instrument consists of 14 Likert-type statements plus 8 items in semantic differential form. A complete report on the development and validity of this measurement can be found in Russel and Hollander (14). A copy of the test as administered is included as appendix "A" of this report. The six instructors were full time staff members who regularly teach the introductory biology course. At the end of the semester the same test was again administered to the six classes. Those students who had taken the test at the beginning of the semester but for some reason had not taken it the second time were removed from the study so that the population which took the test both times was composed of the same individuals.

The test was arranged so that each item could be scored from 1 to 5. The higher the score for each item the more positive was the attitude toward biology. An average per question score was obtained for each instructor's class. This provided an attitude index toward biology which could range from 1.0 for a class with complete negative attitude to 5.0 for a class with a maximum positive attitude. By taking the difference between the first and second attitude indices it was possible to determine if there had been a change in attitude toward biology.

The introductory biology course at San Antonio College is a two semester integrated course. Virtually all of the students are non-science majors and are enrolled in the course in order to fulfill the college science requirement. In order to insure that students attitudes had not been influenced by previous exposure to college biology, only sections of the first semester course were utilized for purposes of this study.

The introductory course is standardized as much as is practical for a multi-section course. There are three lecture hours per week and three

laboratory hours. A common syllabus, textbook, and laboratory are utilized for all sections. The same topics are covered in each section and similar numbers of examinations as well as similar examination questions were utilized by the six instructors in this study. The same teaching technique, lecture-laboratory, was utilized by all six instructors. Considering the high degree of standardization throughout the course it is assumed that any change in attitude exhibited by a class must be influenced to a large extent by the class instructor.

The average change in attitude exhibited by each class was then correlated against the evaluation that class gave to the instructor on selected items from the departmental evaluation form. This evaluation is given at the end of each semester to all students. It is anonymous and administered by someone other than the course instructor. The evaluation consists of a series of specific statements. The students are requested to assign a rating to each item based upon their comparison of the instructor being rated with all other instructors they have experienced. The rating items fall into four categories which are clarity/organization, stimulation, rapport and student achievement. These categories were chosen because they have been shown to correlate positively with student performance on knowledge and/or critical thinking examinations (1, 3, 4, 5, 6, 10). The items in each category are listed below.

Clarity/organization

The presentations made by this instructor were understandable. The examples used by this instructor aided in clarifying the explanations.

The instructor adequately emphasized major points and concepts.

This instructor explained material clearly.

This instructor's presentations were organized.

This instructor was prepared for class.

This instructor summarized major concepts.

Stimulation

This instructor presented material in a stimulating and interesting manner.

This instructor demonstrated enthusiasm for the subject.

Rapport

This instructor provided personal attention.

This instructor was friendly and approachable.

This instructor showed an interest in students as individuals.

This instructor had good rapport with the class.

Achievement

This instructor has increased my knowledge of the subject.

A copy of the complete student evaluation is included as appendix "B" of this report.

The scores for each item were averaged yielding a category/average for each instructor. This category average was then correlated against the class attitude change.

RESULTS

The results of the attitude tests are presented in table one. The means obtained for each class during the first administering (first attitude index) were significantly different. There were significant differences ($p < .05$) between means the second time the test was given (second attitude index). The range between group means on the first attitude index was 0.131 but increased to 0.499 for the second attitude index, nearly a four-fold increase. The differences between the first and second attitude indices show that certain instructor groups had a positive change in attitude toward biology while others exhibited a change in the negative direction.

The results of the student evaluations for each of the six instructors is presented in table two. The possible scores range from 1.0 (well below average) to 5.0 (far above average). Only two of the six instructors were consistently rated below 4.0. These were the same instructors from table one whose classes showed a negative change in attitude.

The correlations between attitude changes which occurred in each class versus their ratings of their instructors in four areas are presented in table three. As may be seen all four areas exhibited high positive correlations with attitude change. Of the four areas only "Stimulation" was not statistically significant.

TABLE I

INSTRUCTOR	FIRST ATTITUDE INDEX MEAN AND STD. ERROR	SECOND ATTITUDE INDEX MEAN AND STD. ERROR	DIFFERENCE	NO. OF STUDENTS
A	3.018 ± .0894	3.213 ± .0800*	+ 0.195	31
B	2.887 ± .0898	2.714 ± .0978*	- 0.173	22
C	2.958 ± .0676	3.107 ± .0672*	+ 0.149	44
D	2.950 ± .0874	2.964 ± .0879	+ 0.014	33
E	2.995 ± .0679	2.905 ± .0623*	- 0.090	48
F	2.996 ± .0597	2.992 ± .0639	+ 0.026	45

Table I. Student attitude indexes toward biology before and after one semester of college biology. Differences column indicates the average group change in attitude. + indicates a more positive attitude after course and instructor exposure. - indicates a more negative attitude after course and instructor exposure. * Significant difference ($p < .05$).

TABLE II

INSTRUCTOR	ORGANIZATION/CLARITY	STIMULATION	ACHIEVEMENT	RAPPORT
A	4.30	4.50	4.30	4.50
B	3.60	3.60	3.60	3.60
C	4.00	4.10	4.10	4.00
D	4.00	4.30	4.00	4.20
E	3.40	2.90	3.70	3.30
F	4.0	4.20	3.90	4.10

TABLE II. Student evaluation averages for the six instructors in the four measured areas. Values could range from 1.0 (poor) to 5.0 (outstanding) with 3.0 being considered average.

TABLE III

EVALUATION AREA	CORRELATION COEFFICIENT (r)
Organizational/Clarity	+ 0.87*
Stimulation	+ 0.73
Achievment	+ 0.93*
Rapport	+ 0.80*

TABLE III. Correlations of student rating areas with student attitude changes. * Statistically significant ($p < .05$).

40

41

DISCUSSION

These results indicate that the attitude of students toward the subject of biology is affected by the instructor. At the beginning of the course none of the classes differed significantly in attitude toward biology but at the end of the course there were significant differences in attitude between classes. As class content and methodology were constant for all classes it is logical to conclude that much of the differences evidenced by the various classes must be a function of the instructor. Hubbard (7) demonstrated that an educational methodology (audio-tutorial) could significantly increase a positive attitude toward biology. The current study indicates that within the framework of a traditional lecture-laboratory approach the individual instructor is very important in determining what type of attitude the students will take away from the classroom. This attitude is significant in itslef but other studies indicate that it may also be very important in student achievement within the course. Simonson (15) found a positive (but not statistically significant) correlation between attitude change and course achievement for college students enrolled in an education course. Hubbard (7) found a statistically significant positive correlation between attitude change and course achievement for a group of students in an introductory biology course and Roettger et al (13) found positive correlations between reading scores and attitude exhibited toward reading by elementary grade students. Hence attitude has to be considered a very important teaching goal whether for itself alone or for the increased student achievement which seems to correlate with it.

The results also suggest that teacher effectiveness in developing positive subject attitudes can be measured or at least indicated by the use of student evaluations. The very high positive correlations between average attitude change and instructor ratings in the four areas would seem to indicate that student perceptions of instructor effectiveness are very closely associated with the attitude change which the instructor invokes in the student. Of the four areas examined only the "stimulation" factor did not correlate statistically significant although it was strongly positive. This is somewhat surprising as it might be assumed that an enthusiastic and stimulating

instructor would be a powerful force for attitude change in students. Sullivan and Skanes (16) found that "the ability to convey enthusiasm for the subject" was one of the characteristics of successful instructors, a successful instructor being one who was highly rated by students and whose students performed well on knowledge measurement examinations. Bryson (1) found a significant positive correlation between instructor ratings in this area and student performance on an algebra examination. Likewise, Marsh and Overall (9) found a statistically significant positive correlation between student ratings of instructor enthusiasm and final examination performance in a computer programming course. The current study is not directly comparable to the referenced studies as attitude change rather than knowledge gain is the item in question.

The ratings of the organization/clarity area correlated significantly with average attitude change. This group of factors has also been found to correlate positively with student performance on examinations in a number of studies (1, 3, 4, 5, 6, 11, 16).

The ratings of rapport which correlated significantly positive in this study with attitude change was found by Bryson (1) to be positively correlated (but not significantly) with student achievement in algebra. Orpen (11) did however demonstrate a statistically significant correlation ($r = +.65$) between student rating of rapport factors and their performance on final examination in mathematics. McKeachie et al (10) demonstrated a significantly positive correlation between instructor rapport and student performance on a test which measured "critical thinking" as opposed to knowledge. Thus student ratings of instructor rapport factors like their rating of the organization/clarity factors seem to correlate positively with both subject knowledge gain and subject attitude gain.

The last area to be examined, student evaluation of thier achievement, had the highest positive correlation of all ($r=+0.93$). Apparently students tend to feel more positive towards a subject of which they think they have learned a great deal. It is of interest to note that in other studies where ratings of instruction are correlated with student performance this factor also had the highest positive correlations (1, 3, 4, 5). These results would seem to

suggest that "demanding" instructors who require their students to learn a great deal of factual information may not "turn off" the student towards the subject but may in fact increase positive feelings towards the subject. This is of course providing the students realize how much they have learned!

In considering these results in their entirety it seems that those rating factors which have been shown to correlate positively with student performance on knowledge and/or critical thinking examinations also correlate positively with attitude changes towards the subject. It would be of interest to see if this relation holds with subjects other than biology. It would also be worthwhile to attempt to refine and delineate specific instructor characteristics which are important in developing positive attitudes in students towards the subject.

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APPENDIX A - BIOLOGY ATTITUDE SCALE

Each of the statements below expresses a feeling toward biology. Please rate each statement on the extent to which you agree. For each, you may: (A) Strongly Agree, (B) Agree, (C) Undecided, (D) Disagree, or (E) Stongly Disagree.

After you have made your choice, blacken in the appropriate response in the columns on the Answer Sheet corresponding to each item.

A	B	C	D	E
Strongly	Agree	Undecided	Disagree	Strongly Disagree

1. Biology is very interesting to me.
2. I don't like biology, and it scares me to have to take it.
3. I am always under a terrible strain in a biology class.
4. Biology is fascinating and fun.
5. Biology makes me feel secure, and at the same time it is stimulating.
6. Biology makes me feel uncomfortable, restless, irritable and impatient.
7. In general, I have a good feeling toward biology.
8. When I hear the word biology, I have a feeling of dislike.
9. I approach biology with a feeling of hesitation.
10. I really like biology.
11. I have always enjoyed studying biology in school.
12. It makes me nervous to even think about doing a biology experiment.
13. I feel at ease in biology and like it very much.
14. I feel a definite positive reaction to biology; it's enjoyable.

Below are some scales on which we would like you to rate your feelings toward biology. On each scale, you can rate your feelings toward biology as a 1, 2, 3, 4, or 5. THERE ARE NO CORRECT ANSWERS. Also, some of the scales seem to make more sense than others. Don't worry about it. Just rate your feelings toward biology on these scales as best you can. Please don't leave any scales blank.

For your response to each scale, blacken in the appropriate box on the IBM card.

BIOLOGY IS:

15.	Good	A	B	C	D	E	Bad
16.	Clean	A	B	C	D	E	Dirty
17.	Worthless	A	B	C	D	E	Valuable
18.	Cruel	A	B	C	D	E	Kind
19.	Pleasant	A	B	C	D	E	Unpleasant
20.	Sad	A	B	C	D	E	Happy
21.	Nice	A	B	C	D	E	Awful
22.	Fair	A	B	C	D	E	Unfair

APPENDIX B

DEPARTMENT OF BIOLOGICAL SCIENCES

STUDENT EVALUATION

EVALUATION ITEMS

In order to answer the following items please use these choices:

a. far above average
b. above average
c. average
d. below average
e. well below average

YOU SHOULD USE ALL OTHER INSTRUCTORS AND/OR COURSES WHICH YOU HAVE HAD IN BOTH COLLEGE AND HIGH SCHOOL AS YOUR STANDARD OF COMPARISON. For example in answering item 1 if this instructor's presentations were much more understandable than presentations from other instructors you have had then you might want to mark item 1 on your answer sheet either a or b. If on the other hand the presentations were much less understandable to you than other instructors you have had you might want to mark d or e.
Keep in mind that you are comparing this instructor and/or course against all others you have had.

1. The presentations made by this instructor were understandable.
2. The examples used by this instructor aided in clarifying the explanations.
3. This instructor adequately emphasized major points and concepts.
4. This instructor explained material clearly.
5. This instructor's presentations were organized.
6. This instructor presented material in a logical manner.
7. This instructor was prepared for class.
8. This instructor summarized major concepts.
9. This instructor demonstrated enthusiasm for the subject.
10. This instructor presented material in a stimulating and interesting manner.
11. This instructor demonstrated a good knowledge of the subject.
12. This instructor has increased my knowledge of the subject.
13. This instructor encouraged students to seek help from him after class.
14. This instructor provided personal attention.
15. This instructor was friendly and approachable.
16. This instructor showed an interest in students as individuals.
17. This instructor had good rapport with the class.
18. The objectives and/or study guides presented by the instructor were _____ in usefulness.
19. The examination questions were based on the objectives and/or study guides.
20. Compared to all other instructors I have had I would rate this instructor.

PROJECT: EFFECTIVE PLACEMENT

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ABSTRACT

In order to pursue alternative methods for effective course placement in a Community College, counselors tested and placed an experimental group of students in college level courses and compared success rates (grades) with traditionally placed students. An experimental group of students was chosen from incoming freshmen who showed borderline scores on college entrance and reading tests, but who possessed average or better I.Q's. These 40 students were placed into college freshmen level courses including English and grades were tabulated at the end of the semester for overall G.P.A. and English grades. Likewise, a control group was chosen for comparison from among traditionally placed students who completed English and for whom an overall G.P.A. was also tabulated. An alternate factor, the ACT predictor was included for the last group along with college entrance and reading scores. A test of Chi Square showed the success rates of the two groups not to be significantly different. Five multiple regression equations were run - two for the experimental group, two for the control group and one for the alternate ACT predictor. Results showed the ACT predictor score to be the only significant ($p < .01$) predictor of English grades. The I.Q. test was shown to be only significant predictor of overall G.P.A. ($p < .005$). Thus both alternative measures were shown to be more significant predictors of grades than established placement procedures.

PROJECT: EFFECTIVE PLACEMENT

One of the objectives of the Counseling Center at San Antonio College is to assist all students in making the transition to college and helping to facilitate their successful adjustment to a college environment. So much of this "successful adjustment" is contingent upon the student being appropriately placed in regular college, or college preparatory courses at the onset.

In that the Counseling Center at San Antonio College also serves as admissions, what constitutes proper placement for entering college freshmen differs from department to department and even from Counselor to Counselor. The author of this paper proposes an alternate method of placement which takes into consideration an additional factor in predicting success in courses for the college freshman.

Certain terms will be used in this paper which, at this point, need to be defined to the reader.

College Entrance Exams

ACT - Test Battery of the American College Testing Program administered to candidates for college entrance. It is comprised of four multiple choice tests of educational development and scholastic ability in English usage, mathematics usage, social studies reading, and natural science reading. Scale scores range from 1 to 36 with the standard deviation set at approximately 5.1.

SAT - College Board Scholastic Aptitude Test administered to candidates for college entrance. It is comprised of two subtests referred to as SAT-Verbal and SAT-Math. The SAT attempts to measure "aptitude for college studies" rather than intelligence. Scores are reported with a mean of 500 and a standard deviation of 100.2

English Coop - Cooperative English Tests measure achievement in reading and written expression of English. Scores range from 115 to 191.3

Developmental Studies - An inter-Departmental program of developmental studies designed for "students whose records indicate they need additional preparation for admission to standard academic or technical courses at San Antonio College. "4

Nelson-Denny Reading Test - Reading Test administered to all entering day division freshmen which determines a reading grade level from -6 grade level to 15+ grade level. The composite score reported has two subscores on vocabulary and comprehension.

Otis-Lennon Mental Ability - Intelligence Test aimed to cover the verbal-educational section of mental abilities. "Scores on the Otis-Lennon tests may be expressed as deviation I.Q.'s and as age and grade percentile ranks and stanines." Standard errors of measurement average about 4.5 I.Q. points at ages 10 or above .5

Revised Beta Mental Ability Test - "The Revised Beta Examination - Second Edition (Beta-II) is designed to measure the general intellectual ability of persons who are relatively illiterate, or non-English speaking, or suspected of having other language difficulties." I.Q. scores range from -60 to 135. Each age group has a mean of 100 and a standard deviation of 15.[6]

In the placement procedure, Counselors initially meet individually with each entering Freshman in the day division, as well as with any other students desiring guidance with course selection or post-secondary planning. The course placement guidelines, carefully developed by individual departments and by the Counseling Center, contribute to effective and appropriate placement in many cases, to the advantage of the student involved. Such guidelines take several factors into account: past academic achievement, college entrance examination scores, strength of verbal skills, motivation, etc. The matter of course placement is not easy, and difficult judgements must often be made as to the entry level recommended for a particular student after taking a multitude of factors into account. When working with bright and capable students who have made average to above average grades, course placement is fairly uncomplicated. Likewise, working with slower students with poor academic backgrounds necessitates certain developmental, preparatory curricula before tackling college level work. Much difficulty arises in working with a very large number of students who fall in between these two populations - students whose ACT/SAT scores and/or previous academic do not provide enough information (to use in conjunction with Nelson-Denny Reading scores and/or departmental exams) for accurate placement.

PROJECT: EFFECTIVE PLACEMENT

Questions arise every semester concerning the accuracy of using ACT/SAT scores and Nelson-Denny Reading Test scores to predict the successful performance of a large percentage of entering Freshmen. At the present, ACT/SAT scores and the Nelson-Denny Reading score are the major factors determining the placement of these entering Freshmen. The majority of students with low scores on the ACT (less than a composite score of 15) and Nelson-Denny Reading Test score (11.9 or below) are channeled into developmental courses which must be successfully completed before the student can enroll in subsequent college level work.

Not taken into consideration has been the probable factor that students with lower than average college entrance scores may possess natural aptitude, as indicated by Otis-Lennon and Beta II Mental Ability Tests, necessary for success in college level courses. Since these students have traditionally been placed in developmental studies courses, there has been no way of knowing whether they could successfully complete college level work.

In an attempt to more effectively place these students at the proper level, the authors of this paper have closely examined this problem. A small experimental project was conducted through the Counseling Center to test the validity of the following hypothesis: that natural aptitude is a reliable predictor of success in college. Therefore, the study aims to prove that there is no significant difference, other than chance, in the percentage of success in college level work between students who, according to traditional placement practices, would qualify for college level work (ACT composite 15 or above and Nelson-Denny Reading score 11.9 or above) and those students who would not have qualified for regular college level work but possess certain levels of natural aptitude. Thus, this research seeks to support the null hypothesis--$H_0: P_1 = P_2$. Furthermore, it is hoped that additional instruments can be identified in this research project that would (possibly) be utilized in the future for obtaining additional information about students that would assist a Counselor in course placement when serious questions arise regarding the probability of the students' success in the recommended courses.

PROJECT: EFFECTIVE PLACEMENT

If students possess natural aptitude for their age, theoretically they could complete Freshmen level courses without going through certain developmental (preparatory) ones. Since intelligence is a good predictor of aptitude this was tested involving entering Freshmen of average to above average intelligence who would ordinarily be placed in developmental studies determined by low ACT (9-13) composite and/or Nelson-Denny Reading scores (9 0 or above). By screening subjects on the basis of I.Q., the experimenters restricted the study to placement of students who had at least an average ability for their age (this is the working definition of I.Q.). As a valid indication of aptitude, the standardized I.Q. tests utilized in the Counseling Center were used for screening purposes prior to placement.

Intelligence was not the sole factor taken into account in the study, although that was the primary screening device in selecting the sample from among all entering Freshmen with ACT composite scores between 9-13 who scored 9.0 or above on the Nelson-Denny Reading Test. Once identified, each subject underwent a series of additional tests to include: the English Cooperative Test, the Otis Lennon Mental Ability Test, and the Revised Beta Examination (Mental Ability).

Each student in the experimental group agreed to participate voluntarily and was told the purposes of the study. Only informed, willing subjects were included and signed statements were obtained indicating their voluntary cooperation. The subjects were chosen at random from potential Freshmen files for both the experimental group as well as a control group, which proved to be necessary for comparison.

Students who were tested and who met the requirements stated above (ACT composite 9-13, Nelson-Denny Reading Test score 9.0 or above, and average to above average I.Q. scores on Otis Lennon and/or Beta II), comprised the experimental group and were placed in Freshman level courses from various disciplines--with prior approval from the Chairperson of that department, but without the Instructor's knowledge. These students in the experimental group

were enrolled in Freshmen classes among Freshmen students who were not included in the study and who had high enough ACT/SAT and Nelson-Denny Reading Test scores to qualify for Freshmen level courses according to traditional placement practices. Therefore, no special treatment was given to those students in the experimental group to skew the results. The students comprising the control group were placed in regular Freshmen level courses which were appropriate for them based on traditional methods of placement.

Depending on the percent "success" of the students (as indicated by numerical grades) in the exeprimental group, it has been attempted to show whether I.Q. scores could be used in placement as an accurate predictor of performance. In order to view the results of this study in better perspective, it was necessary to compare the percent of experimental group students who succeeded in Freshmen classes with the percent of students in standardized Freshmen classes who proved to be successful. A comparison of this type shows the experimental group of students to have a level of ability approaching that of Freshmen in general, even though they may have had low achievement scores.

RESULTS

Freshman English grades for the 37 students in the experimental group were compared to the English grades of 100 regular Freshman level students (Table 1). The results were regrouped as in Table 2 in order to run a two tail test of chi square. The value of the sum of the difference of chi square was 3.102 which did not exceed the 9.51 required for the experimental group to be significantly below or above the Freshman group concerning grade distribution (Table 2)

In order to determine that the successful performance of the experimental group was based on ability rather than chance, an additional sample of 100 students was randomly selected from regular Freshman students who completed Freshman English and a test was run to determine the Standard Error of Proportion of the difference. In this study there existed a 26% chance of having a proportion of difference this great between the percentage of students passing in each group (Table 3). Table 3 shows that the two groups did not differ significantly since $z = .72$ which does not exceed the value of 1.96 needed to make these two groups different at the .05 level of significance.

The results of these two studies tend to support the null hypothesis which states that there is no significant difference in the performance of regular Freshman level English, as indicated by grades, between students who qualified for placement according to traditional placement practices and those students placed in the course on the basis of average to above average aptitude (as indicated by the Otis-Lennon and Beta II Ability Tests).

In addition, the experimenters tried to determine the accuracy of the predictors within each group through more descriptive statistics. Through the use of a multiple regression equations, results could show the extend to which each of the predictors (ACT, N. D., Otis-Lennon, ACT Predictor Scores) or any combination thereof were contributing significantly to a student's success in school. The five groups of students which provided data for five multiple regression equations were all enrolled in Fall '78 semester. Two sets of results

(Group I and II) were taken from the experimental group described here. i.e. P.E.P., and three other regression equations (Groups III, IV and V) were taken from control groups chosen randomly from the Freshman population. They are described and labeled here:

Group I P.E.N.G. - P.E.P. Experimental Group

Otis-Lennon Scores + ACT English Scores + Nelson Denny Scores predicting English 601A Grade

N=30 students who finished English 601A (placed on basis of I.Q.)

Group II P.G.P.A. - P.E.P. Experimental Group

Otis-Lennon Scores + ACT Composite Scores + Nelson Denny Scores Predicting Overall GPA

N=40 students completing semester of various courses (placed on basis of I.Q.)

GROUP III R.E.N.G. - Comparison Group

ACT English Scores + Nelson Denny Scores predicting English 601A Grade

N=100 students who completed English 601A, placed according to traditional method

GROUP IV R.G.P A. - Comparison Group

ACT Composite Scores + Nelson Denny Scores predicting Overall GPA

N=100 students completing semester of various courses placed according to traditional method

GROUP V A.E.N.G. - Subgroup of R.E.N.G.

ACT English Scores + Nelson-Denny Scores + ACT Predictor predicting English 601A Grade

N=63 students who completed English 601A from whom ACT Predictor Scores could be obtained

All data cards were run to provide output from the SPSS program for a stepwise or standard multiple regression equation. The results showed the degree to which each predictor in the equation alone or in conjuntion with another predictor contributed to variance of the depended variables. The F ratio value provided

by the computer indicated those factors which could be considered significant predictors of passing grades. This ration is based upon the value of R^2, a natural measure of prediction accuracy which consists of the ratio of explained variance of the dependent variable (grades) to the total variance in Y. In addition, for equations in Figures 4-8 the printout not only recorded the overall test for "goodness of fit" of the entire regression equation, but also provided a test for significance, (F value) for a specific regression coefficient within it. In other words, the "R" square change" value reflected the amount of accountable variance of Y for which each factor could account. Although the actual computation of the F value is not of great concern, the test indicated whether this sample of observed behavior being analyzed was drawn from a population in which the multiple correlation was equal to zero = the null hypothesis H_0:R = 0. Furthermore, any observed multiple correlation could have been due to sampling fluctuation or measurement error. In other words, any correlation which has been found between the predictors and the independent variable must exceed the cirtical value of F to show that the multiple correlation is not due to chance or other sampling errors. In each case the F value supplied by the multiple regression equation was charted on an F distribution in a statistical table to check its significance.

The only factors which were found to be significant predictors of grades were two. Of the factors used to predict success in English 601A, only ACT Predictor Scores were shown to account for the variance to a significant degree. The ACT Predictor accounts for almost 13% of English 601A variance and was found to be significant at the .01 level (Table 8). So that out of the total amount of variability which has occurred in English 601A Grades, Nelson Denny Scores, ACT English Scores and ACT Predictors together account for 15% of it. Of this 15% variance almost all (12.5%) determined by the ACT Predictor Scores.

Likewise, when predicting overall GPA, the only factor which proves to be significant is the Otis-Lennon I.Q. It accounts for 10.4% of the 22.6% accountable variance--and rates as the most significant predictor of this study, $p < .005$ (Table 5). The probability of getting an F ratio equal to or greater than 9.177

in this case is less than .005. With the exception of these two variables, it could be concluded, that these samples were drawn from a population in which all regression coefficients were equal to zero.

DISCUSSION

The results of the study tend to support the null hypothesis; that students placed according to I.Q. fared as well as students placed according to achievement tests. In addition, (of all predictors used here) I.Q. was shown to be the best indicator of overall G.P.A. The best predictor of English grades was shown to be the ACT predictor which is a probability rating for success in English 601A based on local norms.

The results of the multiple regression analysis, furthermore give support for alternative placement methods since instruments currently being used showed no predictive value at all. In none of the five multiple regression samples, did the Nelson-Denny scores or ACT scores contribute significantly to a student's success in this college, based on passing grades. Yet, up to this time these two instruments have been used as the primary basis of course placement, particularly in Freshman English. In this sense, the factors which are not shown to be significant contributors, are just as important as those which are. Even though this study is based upon just a sample of this college's population, the consistency of these results involving Nelson-Denny Reading scores and ACT scores tends to lend credence to the consideration of alternatives for placement.

The fact that our current parameters for English placement, for example, can only account for 13 percent of the variance at most, suggests that a better indicator of passing grades is needed. On the other hand, the Otis-Lennon I.Q. Test, which be itself accounts for 20 percent of the variance in overall G.P.A., seems to be a natural predictor of success in college. One instrument like this one could give a Counselor a more accurate picture of a students probability of success in college when used in addition to present measures. Surely, in continuing studies, more accurate predictors of success such as high school

grades, measures of motivation, or proper study habits will be discovered to provide further enhancement of placement. These factors when defined could prove to be most helpful for students like those in this study who fall in the grey area of placement criteria.

Alternative instruments which could produce more effective placement of students should be viewed as a method to complement the present placement of students, and should be given careful consideration.

An alternative placement method could also prove to be most helpful to the atypical student seeking admission after a considerable lapse in time since the last year of formal education. In addition, the recent rise in the average age of students at San Antonio College presents the problem of these students not performing well on achievement tests, such as college entrance tests, and deems consideration of additional information such as aptitude tests in predicting success. As is the belief of this author and other Counselors involved in this study, a large sector of the student population could well benefit from additional testing and consideration of this sort.

An alternative method such as this one which considers aptitude in addition to achievement and Reading Test scores seems to indicate greater accuracy in placement and Counselors involved in this study promote its use as a complement to the present system.

Results of English 601A Grades for Both Groups

Table 1

	A	B	C	D	F	Other (Drops)	Total
P. E. P.	0	9	10	7	4	7	37
Regular Freshmen	4	30	32	11	13	10	100

Table 2

	A & B	C	D & F	Other	No. of Students
Experimental (P.E.P.)	9	10	11	7	37
Control	34	32	24	10	100

Table 3

	Passing			Failing		
	A	B	C	D	F	No. of Students
Experimental (P.E.P.)	0	9	10	7	4	30
Control	8	31	31	12	18	100

Standard Error of Proportions

PROJECT: EFFECTIVE PLACEMENT

I. P.E.N.G.

Otis Lennon + ACT English + Nelson Denny ——→ English Grade

N = 30

Total variance of English Grade accounted for = .0746
Mean English Grade = 72.1

	Otis Lennon	ACT English	Nelson Denny
Mean	93.1	11.4667	10.6400
Correlation with English Grade	.26561	.08072	.08272
Variance Accounted for (R.Sq. Change)	.07055	.00410	.00000
F Value Level of Significance	_____	_____	_____

PROJECT: EFFECTIVE PLACEMENT

II. P.G.P.A.

Nelson Denny + ACT Composite + Otis Lennon ——→ Overall G.P.A.

N = 40

Total Variance of G.P.A. accounted for = .226
Mean G.P.A. = 2.042

	Otis Lennon	ACT Composite	Nelson Denny
Mean	92.73	11.00000	10.57
Correlation with G.P.A.	.44106	.29906	.15570
Variance Accounted for (R Sq. Change)	.19453	.03120	.00054
F Value Level of Significance	*P<.005	_____	_____

*B Score = .699 (Predicted score increase in G.P.A. for every point in I.Q.)

PROJECT: EFFECTIVE PLACEMENT

III. R.E.N.G.

Nelson Denny + ACT English ——→ English Grade

N = 100

Total Variance of G.P.A. accounted for = .02654
Mean English Grade = 75.0

	Nelson Denny	ACT English
Mean	12.942	18.060
Correlation with English Grade	.05315	.16261
Variance Accounted for (R Sq. Change)	.00009	.02644
F. Value Level of Significance	———	———

PROJECT: EFFECTIVE PLACEMENT

IV. R.G.P.A.

Nelson Denny + ACT Composite ——→ G. P.A.

N = 100

Total Variance of G.P.A. accounted for = .03822
Mean G.P.A. = 2.5317

	Nelson Denny	ACT Composite
Mean	12.942	17.49
Correlation with G.P.A.	-.00055	.18151
Variance Accounted for (R Sq. Change)	.00527	.03295
F. Value Level of Significance	_____	_____

PROJECT: EFFECTIVE PLACEMENT

V. A.E.N.G.

ACT English + Nelson Denny + ACT Predictors ——→ English Grade

N = 63

Total Variance of English Grade Accounted for = ,146
Mean English Grade = 76.0

	ACT English	Nelson Denny	ACT Predictor
Mean	18.1905	12.9730	60.6667
Correlation with English Grade	.17975	.15801	.35854
Variance Accounted for (R Sq. Change)	.00300	.01447	.12855
F. Value Level of Significance	———	———	*P<.01

*-B = .686 (Predicted score increase in English Grade for every point in ACT Predictor)

PROJECT: EFFECTIVE PLACEMENT

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Consultation with Dr. Larry Stanley, Department of Psychology, Trinity University, San Antonio, Texas

FOOTNOTES

1 Oscar Krisen Buros, ed., Mental Measurements Yearbook (Highland Park, N. J.: Gryphon Press, 1972), p. 330.

2 Mental Measurements Yearbook, p. 344.

3 Scarvia B. Anderson, ed., Manual for Interpreting Scores - Cooperative English Tests (Princeton: Educational Testing Service, 1960), p. 5.

4 San Antonio College Bulletin, 1978-79 (Austin: Best Printing Company, Inc., 1978), p. 52.

5 Mental Measurements Yearbook, p. 370.

6 C. E. Kellogg and N. W. Morton, ed., Revised Beta Examination (Beta II) Manual (New York: The Psychological Corporation, 1978), p. 3.

Copies of this study may be obtained from:

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SURVEY ON
COMPUTER ASSISTED INSTRUCTION (CAI)

by

Temple Junior College

SURVEY ON

COMPUTER ASSISTED INSTRUCTION (CAI)

This survey is a response to junior and community colleges throughout the state on the use of Computer Assisted Instruction (CAI). This focuses on Computer Assisted Instruction and not on teaching Data Processing, Computer Programming, or Computer Sciences.

Questionnaires were sent to 37 junior and community colleges, and 32 of the colleges responded.

SURVEY ON
COMPUTER ASSSITED INSTRUCTION (CAI)

I. COLLEGE INFORMATION

A. Colleges responding: 32

B. Are you providing Computer Assisted Instruction at the present time?

Yes: 17
No: 15

C. Do you expect to begin offering such services in the near future (by Fall 1984)?

Yes:	6	"Probably":	1
No:	7	"Doubtful":	1

D. How long have you been providing such services? Began offering CAI in:

1970	1	1982-83	5
1975-76	1	3-5 Years	1
1978-79	1	Several Years ago	1
1979-80	2	1 Week	1
1981	3	No answer	1

E. Comments:

"Few offerings--usually short drills, etc.--in R.N., English, math."

"Done only with students in accounting classes."

"Math and Sciences just getting underway--word processing."

"What's CAI? There are many uses of the micro for instruction. Does using a micro for simple bills constitute CAI?"

"Math, accounting."

"Last week we bought two Apple II's to use for CAI."

"We are currently evaluating the PHOENIX programs offered by Goal Systems for use within our on-campus programs."

"We are not planning to begin CAI in any organized fashion by 1984. However, several faculty members are taking courses to prepare for CAI at some point in the future."

"We hope to initiate CAI in accounting, beginning in 1984."

"Started very slowly with acquisition of a few programs from CONDUIT. With funding from NSF grant, purchase of 6 Tevak micro systems and courseware authoring system provided start-up impetus."

E. Comments (cont'd)

"CAI now very limited because most of our hardware is tied up by computer science and data processing courses. We use about a half dozen Apple II's in CAI."

"On a very limited basis."

"CAI is not the purpose for which we acquired computer equipment. Because we have computers, some instructors have made instructional use of them."

"We are just now beginning. We do not yet have any experience to relate."

"We are using this year for staff development, some courseware development, and to a larger extent, courseware procurement. Hopefully, much of this will be integrated into the classroom next fall."

"Our Biology, Math, Physics and Chemistry faculty have used micro-computers on a limited basis for at least two years, but not to the extent of relying on the computers for theory-practice."

II. MAINFRAME COMPUTER USERS (MULTI-TERMINAL)

A. Does your college use a mainframe for CAI?

Yes:	9	Both Yes/No:	1
No:	8	N/A:	14

B. How many terminals are in use?

12 CAI

15 +

60 approximately

6 for instructional purposes

14 IBM, 10 TS-80 Radio Shack

? We have 40 terminals + 24 micros

12 Commodore Pets,
9 IBM on 4331

6

20 for DP curric. & Engr.

13 IBM terminals; 12 connected to microdata for Intro. D.P.

C. Where do you get your programs?

"self develop"

"self develop and CONDUIT"

"mostly self-developed"

"self develop, professional programmers"

SURVEY ON
COMPUTER ASSISTED INSTRUCTION (CAI)

II. C. (cont'd)

"self-develop, professional programmers on staff."

"self-developed by college Business Data Processing personnel and from other schools."

"self-developed and Radio Shack."

"combination"

"self, prof. programmers, some purchased."

D. Comments:

"Instruction Data Processing Dept. 30 with 30 or more on order. 15-20 adm. use."

"A Data General Eclipse C-350 is being used for current project. The currently installed IBM mainframe as well as some micro's are proposed for use in support of the on-campus programs."

"We are expanding our computer facility as rapidly as we can. D.P. courses are extremely popular and we could offer more courses if staff and equipment were available."

"We are moving in the direction which will shift CAI support from central computer toward micro-computers."

"We use CAI really only in 3 non-Data Proc. courses:

1) Management - We have purchased several professionally developed management games (FORTRAN) and use on IBM mainframe 3-5 times per semester.

2) Engineering Classes - regularly scheduled in IBM Lab

3) Computer Assisted Drafting - scheduled to begin Fall '83; currently in process of hardware selection"

III. MICROCOMPUTER USERS (SMALL PERSONAL TYPE)

A. How many are in use for CAI?

B. What type (brand name)?

6 IBM PC
42 (variety of brands)
12 Commodore Pets
15 Apple II+
10 Radio Shack TRS-80
2 Apple IIe
3 Apple, 5 Pet
5 Tevak
? H.P.
16 Apple IIe
1 IBM
2 Apple
6 Apple II
2 Apple II+
3 Apple, 1 TRS-80 (plus 1 ordered)
1 Vector Graphic, 1 Apple II+, 1 Franklin 1200

SURVEY ON
COMPUTER ASSISTED INSTRUCTION (CAI)

III. C. Where are they located?

1. Centralized and controlled: 11
2. By department: 9
3. Other: 1

D. Are some or all of the computers linked together?

Yes: 7
No: 10

E. Do faculty:

1. Get release time for Program Development?

Yes: 2
No: 14

2. If yes, how much time?

"Depends on project"

"Some do - 1/5"

F. Comments:

"Faculty may apply for in-house mini-grants related to CAI."

"We have a faculty grants program, one facet of which is released time for approved projects."

"We have 25 IBM PC's in a central lab for use in Intro DP course and Computer Science."

"The Hewlett-Packard used by the Math Dept. (for teaching statistics) since about 1970 broke down two years ago and is not worth repairing. The Physics, Biology and Chemistry faculty use an IBM primarily for student research."

"We are still in setup mode. Eventually we will have 40-50 units located by department. Release time will be up to departmental wisdom."

"Micros mainly used to supplement in Intro D.P. labs and in numrous Continuing Educ. 'Home Computer' classes."

"The faculty member who developed the accounting package tested the package on our system but has a TRS-80 at home and is marketing the package. We allowed him to use our PC and let him test it in exchange for free use of the entire package."

Comments (Cont'd)

"No one has requested released time. It probably would be granted if project worthwhile. 1/5th or 1 su. term."

"We have on occasion paid instructors for special efforts in developing CAI programs. This is usually not the case, however. Developing a course in CAI is like developing a new 'proposition' in many disciplines."

"Not far enough along to really know what is needed."

"We plan to include a central micro lab to complement departmental micros (Jan 84)."

IV. PROGRAM ADMININISTRATION

A. Program administered through:

1. Instructional Vice President:	7
2. Student Services Vice President:	0
3. Departments:	5
1. & 2: (Curric. thru VPI; labs under VPSS)	1
1. & 3:	2
Comp. Serv. Div.:	2
Learning Resource Center:	1

B. How extensive is CAI staff:

1. Operates with _____ individual(s) responsible for:
   a. Directing
   b. Program Development
   c. Operation
   d. Maintenance

1 - a.	Overall admin.-
1 - a.b.c.d.	computer staff
1 - c.d.	(1 director, 2 programmers,
2 - a.	1 operator) responsible
3 - a. b.c.d.	for both administrative and
4 - c.d. (CS & DP labs)	instructional computers
1 - a.b. (60% time); 2 - c.d.	D.P. helps in all dept. chrs.
None	
1 on C.P.; 4 on IBM 4331 - a.b.c.d.	

2. Operates without any specific salary commitment for administration or operation.

Yes: 8 No answer: 2
No: 3

C. Comments:

"We also have 13 Atari used for teaching BASIC."

"We do not have anyone, at present, who is responsible just for CAI. Several people, who work in other areas, work to promote on this campus."

"The librarian and I are soliciting requests for CAI from instructors. We will evaluate these as they are presented."

"No CAI staff. An estimated 45...faculty have taken professional development courses which teach how to use software or how to program in BASIC."

"Currently only faculty members within department. We plan to expand and identify 1 individual to coordinate department and central lab utilization." (IV. B.)

"Also use of other support staff from Computer Services Division." (IV.B)

"We plan to purchase some 10 to 15 microcomputers for next year and use available software for Accounting, Physics, Math, Chemistry and English. We plan to have the program under the Academic Dean. The equipment and software would be housed in the Library.

"Initially we are tightly controlling the first phases. Eventually we expect each department to assume local responsibility as needed."

"Staff consists of instructional computing liaison plus two half-time programmers. Liaison spends large portion of his time in faculty development workshops, seminars and classes. Liaison is a 9 month faculty appointment. Programmers are on 12-month appointment."

V. IF YOUR COLLEGE IS INVOLVED IN CAI. WHAT WOULD YOU DO DIFFERENT IF YOU WERE TO DO IT AGAIN?

"Just starting to emphasize. Not enough data to be useful."

"Have a clear plan with top administrative support."

"Not far enough along to know."

"Nothing."

"We have purchased equipment and software to help instruction in various subject areas. Persons in those subject areas have developed objectives and strategies for using the equipment and software. Doing it over again, I would hire a media specialist (knowledgeable especially in CAI) to develop, manage, and coordinate the CAI program. This person would come with the necessary (computer expertise) as opposed to our 'in-house training' our people at the onset."

"Unknown."

"Administrator - full time. CAI lab should have someone on staff with expertise in instructional design (using computers)."

"Nothing. We are allowing each department to justify its own needs through existing channels. Assistance (technical and instructional) is provided through the Computer Center and a College Micro-Computer Advisory Committee."

"Need to expand CAI (as distinct from CS & DP)."

"Driving force should be at a Director's level with commitment from college in form of budget for software acquisition and development--including personnel. Currently much responsibility is placed on responsible person with very little direct means to meet the responsibility in way of budget or decision making authority. Our approach has, however, allowed or forced a slow and cautious approach to CAI. This does have a number of advantages. However, in many areas we could conceivably have a great deal more software running to support instruction if we were committed to CAI in spirit as well as in organizational structure and budgetary resources. We do a fine job supporting administrative computing with full-time director and several full-time programmers. We have accomplished much; however, it seems to me that a school can progress at its own rate depending upon the commitment from board and from top administration. When we started our efforts, there was little if any top-level support. We now have that support with the overriding philosophy that we owe our community and students the effort and discipline to ensure we are making best use of our personnel and equipment. I hope that we will continue to support evaluation of state-of-the-art hardware and software so that we can manage the technology rather than have it manage us."

FINAL COMMENTS:

"...expects to add a number of personal type and more terminals hooked to mainframe for instruction (mostly BA Dept.) within a year."

"We are currently looking at these CAI options which you have mentioned. I am very interested in your results. I plan to use a member of my staff for development of CAI but am not sure how much and what for."

II

ABSTRACTS

A COMPARISON OF ATTITUDES TOWARD AND ACHIEVEMENT IN BIOLOGY AND DESCRIPTIVE CHARACTERISTICS BETWEEN COMMUNITY COLLEGE STUDENTS ENROLLED IN ALTERNATIVE INSTRUCTIONAL MODES

by

Carolyn C. Robertson
North Texas State University, August, 1982

Major Advisor: Dr. Bob Miller

The problem of this study was a comparison of attitudes toward and achievement in biology between students enrolled in an introductory biology course taught using instructional television and as taught at Tarrant County Junior College South Campus in the spring semester of 1982.

Data were gathered using three instruments: a semantic differential to assess attitude, an achievement test keyed to the course objectives, and a student profile information sheet. The data were coded onto computer sheets for processing. Statistical procedures used for analysis of the data included the *t*-test for related samples, *t*-test for independent samples, analysis of covariance and Chi-square analysis of the profile data.

Several findings resulted from this study: There was no significant difference between the pretest mean scores of the two groups on the attitude test; there was no significant difference between the pretest mean scores of the two groups on the achievement test; the instructional television students in general were more mature than the "on-campus" students, married, worked full-time, attended school part-time, and had completed thirty or more college credit hours prior to enrolling in the introductory biology course; the "on-campus" students were younger than the instructional television students, single worked part-time and had completed less than thirty college credit hours prior to enrolling in the introductory biology course.

Recommendations included the following: Faculty involved in planning for "on-campus" biology course materials should reassess the organization of those materials; producers of instructional television courses should use the

profile (demographic) information obtained in this and other studies when preparing telecourse materials in order that the appropriate target student audience will be served with the telecourse lessons and support materials; a more in-depth study involving other institutions correlating the demographic data with achievement test scores, attitude scores and course grades is recommended.

A COMPARISON OF THREE METHODS OF CAREER GUIDANCE ON THE LOCUS OF CONTROL DIMENSION OF COMMUNITY COLLEGE STUDENTS

by

Jeannie Wyatt, Ph.D.
The University of Texas at Austin, 1981
Supervising Professor: Donald T. Rippey

The purpose of this study was to compare the effects of three methods of career guidance on the locus of control dimension of community college students. The three intervention treatments were counselor-assisted, counselor and computer-assisted, and computer-assisted. The study examined the effects of participation in a career guidance process on the locus of control dimension in relation to participant's sex, age, completion of optional behavioral tasks, and reason for withdrawing from college courses.

The experimental design used in this study was a randomized pretest-posttest control group design. The adult form of the Nowicki-Strickland Internal-External Scale (ANS-IE) was used to measure change in the locus of control dimension. Differences between ANS-IE pretest and posttest scores were determined within each treatment group and across all groups.

Results indicated that students in the treatment groups became more internally-oriented following participation in a career guidance process regardless of the specific nature of the intervention. These data offered no evidence to suggest a significant difference ($p < .05$) between ANS-IE mean scores for males and females, for younger and older students, or for those completing and not completing optional behavioral tasks.

A CONCEPTUAL MODEL FOR MANAGING HUMAN SERVICE ORGANIZATIONS: SELECTED CASES FROM THE COMMUNITY COLLEGE

by

Deborah Lee Kerr, Ph.D.
The University of Texas at Austin, 1982
Supervising Professor: John E. Roueche

Human service organizations, including colleges, are approaching a managerial crisis. Management of these systems is increasingly important as economic conditions and recent legislative decisions create the need for more effective and efficient organizations. This study validated the McDaniel-Morris model of human service organizations which potentially supports the development of improved managerial strategies.

This model identifies six characteristics which distinguish human service organizations from other types of organizations. These characteristics are: client control over outcomes, lack of technology, complex interactions, long time horizons, difficulty of cost-benefit analysis, and the participation of professionals in service delivery. A field study of a particular type of human service organization, the community college, was designed to determine (a) the accuracy of the model in describing the community college, (b) theoretically ideal responses to the conditions implied in the model, (c) actual responses to conditions implied in the model, (d) a way to use the model as a framework for the development of managerial alternatives.

The data collection process was a review of relevant literature and field interviews. The literature provided the basis for the development of a set of theoretically ideal managerial responses to the condtions implied in the model. Qualitative data was collected from the presidents, vice-presidents, deans, board members, and students at four community colleges in Texas, using a self-report survey, interviews, and document analysis.

The research confirmed the importance of the six characteristics of the model. Theoretically ideal responses to managerial constraints were developed. Actual responses of managers differed from the ideal responses. Based on theory and the practice of human service administrators, managerial strategies to help the human service manager increase the effectiveness and efficiency of human service organizations were proposed. The model was restructured to increase congruence between theory and practice.

A STUDY OF PERCEPTIONS OF THE UNIVERSITY ENVIRONMENT AS EXPRESSED BY COMMUNITY COLLEGE TRANSFERS AND NATIVE JUNIORS

by

Annette Mauney Randall, Ph.D.
The University of Texas at Austin, 1982

Supervising Professor: George A. Baker

Using sample groups of community college degree holders and native juniors this study compared perceptions of the collegial environment of the University of North Carolina at Charlotte. The community college group had obtained Associate of Arts or Associate in Applied Science degrees from Central Piedmont Community College in Charlotte, North Carolina and transferred to the university in Fall semester, 1981 or in Spring semester, 1982. The College Characteristics Index, authored by George Stern and C. Robert Pace, was administered to transfers and native juniors for a total of fifty plus fifty respondents who were included in the study. Results of data analysis indicated that sample groups did, in fact, differ significantly along dimensions associated with the university environment as defined by the College Characteristics Index; those four dimensions are measures of the academic/intellectual millieu of the university, and these findings support strongly the body of literature which includes the use of this particular instrument. Within the transfer group, a meaningful relationship between Grade Point Average (upon graduation from Central Piedmont) and the eleven perceptual dimensions was not found. Further, a random relationship between Declared Major and Grade Point Average was confirmed for both transfer and native junior groups. Conclusions to the study affirm the efficacy of reexamination of transfer education through the systematic investigation of transfer student's pre-transfer perceptions of the university environment, as one way in which students' needs may be identified. This dissertation also emphasizes the importance of experimental, cross-sectional designs which may then be applied to the systematic college study of the mobility of transfer students from the community college to the university.

A SYSTEMS MODEL FOR STUDENT RETENTION AT HOUSTON COMMUNITY COLLEGE

by

James Powers Rice, Ph.D.
The University of Texas at Austin, 1982
Supervising Professor: George A. Baker

This descriptive study was the result of field observation, interviews and specific documentation of the evolution of procedural and policy changes occuring at Houston Community College and relating to the following student retention strategies: 1) A review of retention-related institutional policy, 2) a rennovated and expanded orientation procedure for new students, 3) a model scheduling process, 4) assessment of basic skills for new students, 5) a rennovated registration process, and 6) implementation of a counseling/advisement system.

The strategies were reflected in three generations of descriptive models: Pre-Treatment, the analysis of the subject's attrition rate before initiation of the study, Post-Treatment, the analysis of the attrition rate after intervention, and Recommended, the result of an integration of strategies identified as having a positive effect on retention and which are both cost effective and cost beneficial to the organization.

The results of the study indicated that of the strategies implemented, the model scheduling process was the most effective. Although the attrition rates were reduced only slightly at each of the five campuses, the strategies were evaluated as being successful because of the qualifying fact that only new students were treated.

The product of the study, the Recommended Model for Student Retention, was designed for use by a community college administrator embarking on the creation of a comprehensive, systematic student retention program.

AN INVESTIGATION OF PERFORMANCE BEHAVIORS OF MEXICAN AND ANGLO AMERICAN DEANS AND CHAIRPERSONS AS THEY MANAGED CRITICAL INCIDENT SITUATIONS IN SELECTED TEXAS COMMUNITY JUNIOR COLLEGES

by

Pedro Rocha, Jr., Ph.D.
The University of Texas at Austin, 1981
Supervising Professor: George A. Baker

The purpose of this dissertation was to identify, analyze, describe, and compare performance behaviors of Mexican American deans and chairpersons in Texas public community junior colleges as they resolved a set of critical incident situations.

The research methodology was derived from two well-known techniques: 1) the Critical Incident Technique (CIT), and 2) the Behavioral Event Interviewing Technique (BEIT). It consisted of writing and using a set of validated critical incident scenarios to collect data. The data were collected by interviewing respondents as to how they would resolve the problem situations described in the scenarios. The respondents consisted of two groups of Mexican Americans: 7 deans and 7 chairpersons, and two similar comparison groups of Anglo Americans. These groups were also representative of two college environments defined by different proportions of Spanish-surnamed students in those colleges. Interview protocals were keyed to a set of generic managerial competencies. It was hypothesized that there would be differences in the extent and number of managerial competencies used by respondents according to ethnicity, environment, and position role.

The results of this study indicate that ethnicity, environment, and position role have only a minimal impact on the use of managerial competencies. However, these results also support the perception that Mexican American administrators exhibit the same array of managerial competencies as their Anglo American counterparts in Texas public community junior colleges at the dean and chairperson level.

Although few substantive findings emerged from the present study, it can be viewed as a pioneering effort methodologically. Thus, the significance of this study rests largely on the fact that its methodology provides a new tool for future systematic research with different respondents. In addition, the present study adds to the knowledge-information data base about Mexican Americans in educational administrative environments.

CHANGES IN SPENDING PATTERNS AND REVENUE SOURCES OF SELECTED TEXAS PUBLIC COMMUNITY COLLEGES, 1970-1980

by

Bernhard T. W. Sedate, Ph.D.
The University of Texas at Austin, 1982

Supervising Professor: Dr. Donald T. Rippey

This study examined educational and general expenditures and current operating revenue of fourteen selected community colleges in Texas for the period 1970 through 1980 to determine income and expenditure patterns of Texas public community colleges during the 1970s. Data for nine expenditure functions and four sources of revenue were collected from independent audit reports filed by each institution with the Coordinating Board, Texas College and University System. Financial data were adjusted to account for the impact of inflation with a factor derived from the Higher Education Price Index. Official enrollment data, compiled by the Coordinating Board and converted to student contact hours, were used to weigh the financial data for changes in enrollment during the eleven-year period.

The study found that the colleges selected for the study were quite diverse in ways in which they acquired and disbursed resources. Generally, the institutions maintained a general balance for the decade; total revenue and expenditures for 1979-80 approximated the 1969-70 level, considering inflation and enrollment change. As a group, Texas public community colleges obtained funds to match inflation and enrollment changes, relying more upon state funds and less from local sources, especially student tuition and fees. Expenditures closely followed the pattern of available funds with increases in costs for staff benefits and physical plant, especially utilities, and with reductions in resident instruction, particularly faculty salaries. Over the eleven-year period individual colleges varied greatly in resource acquisition and allocation, both internally and in comparison with other institutions. In very few instances were economics of scale evident for either revenue or expenditures when the colleges were grouped by size.

The study provides an historical base that Texas public community colleges may use to review their own income and expenditure patterns and to make fiscal comparisons with other colleges with similar missions and modes of operation. Those colleges that vary greatly from the median in any of the categories examined in the study would do well to determine the reason for that variance, to be aware of the consequences of the disparity, and to take corrective action if such action is necessary and possible.

MARKETING STRATEGIES EMPLOYED IN PUBLIC COMMUNITY COLLEGES, PUBLIC AND PRIVATE COLLEGES AND UNIVERSITIES IN TEXAS FOR NONTRADITIONAL STUDENTS

by

John J. Losher
North Texas State University, 1982

Major Advisor: Dr. Bob W. Miller

The problem of this study concerned the marketing strategies utilized by public community colleges, public and private colleges and universities for the nontraditional student in Texas.

Subjects of this study consisted of 101, or 78.9 percent of the original population of 128 regionally accredited colleges and universities in Texas as listed in the Educational Directory, Colleges & Universities, 1980-81. Out of original subpopulations of 56 public community colleges, 48, or 85.7 percent; 26, or 76.5 percent of the 34 public colleges and universities; and, 27, or 71.1 percent, of the 38 private colleges and universities surveyed participated in the study. Contact persons for the study were primarily public relations officers.

The majority of the colleges and universities in Texas used the following marketing strategies:

1. had external lay personnel, i.e., local, state, national, and/or professional leaders to determine institutional programming needs and to evaluate educational programs;
2. had instructors evaluated by students;
3. offered credit by examination programs;
4. had a system for collecting and analyzing the reason(s) students attended their institution;
5. provided classes off-campus;
6. Offered evening classes;

7. had on-campus counseling services specially for nontraditional students;
8. had scholarships and grants for full-time and part-time nontraditional students;
9. sent personnel off-campus to recruit students;
10. had a system for communicating with local businesses;
11. provided businesses the complimentary use of classrooms for meetings;
12. used radio, newspapers, and television for promotional purposes and,
13. communicated with their external and internal publics at least annually through survey questionnaires, newsletters, public announcements, and personal visits.

Formal marketing plans are used only on a limited basis. Community colleges, as a group, are more likely to employ a comprehensive set of marketing practices and to typically use product, distribution planning, pricing, and communication/promotion marketing strategies. The preponderance of colleges and universities did seek to attract and serve nontraditional students for on-campus rather than for off-campus programs.

It is recommended that marketing workshops be developed and hosted by one or more recognized professional associations in the state for administrators, faculty representatives, and community leaders for the purpose(s) of clarifying the concept of marketing and to illustrate the merits of integrated marketing programs; that a state marketing plan be developed through a consortium of colleges and universities to serve as a model for all institutions; and, that adequate financial and human resources be made available in order that preferred marketing strategies are implemented.

PERSONAL SKILLS AND CLINICAL PERFORMANCE EVALUATION

by

Arlene Joan Kostoch, Ph.D.
The University of Texas at Austin, 1981
Supervising Professor: Donald T. Rippey

This study was designed to distinguish the relationship between several types of educational assessment and make inferences about assessment, particularly as it relates to admission policy. Data accumulated on performance assessments during the program, and subsequent decisions based on these assessments, reflect policies, often implicit, regarding student qualities and performance. Incorporated in the design of the study was the investigation of the validity of a student self-report inventory, Personal Skills Map (PSM-SR), and the instructors' perception of the student on the same dimensions of the Personal Skills Map (PSM-F) as well as the student program performance as indicated by the instructors' evaluation of clinical skills.

One hundred thirty-two students enrolled in an associate degree nursing program at a community-junior college in the fall semester of 1980 participated in the study. Null hypothesis were established in the following areas to compare (1) distribution of scores for each of the eleven scales of PSM (SR) and corresponding scales of PSM (F); and (2) regression weights of clinical evaluation of nursing performance and eleven scales of PSM (SR). The data provided in this study were analyzed with a variety of statistical routines using a home computer. The findings of the study indicated that there were significant differences in the rating of the student by the faculty member and the individual student as self-reported on the Personal Skills Map. There was a decided demonstration of the bias of central tendency by the faculty while the students more often rated themselves in either high or low categories. The isolated personal skills with the highest bivariate correlation were empathy, growth motivation, time management, and commitment ethic. There was limited support for the validity of the Personal Skills Map in predicting evaluation of clinical performance.

RELATIONSHIPS AMONG LEADERSHIP, ORGANIZATIONAL CLIMATE, AND STUDENTS' SEMESTER RETENTION AND MEAN CLASS GRADES IN CLASSES TAUGHT BY PART-TIME INSTRUCTORS IN SELECTED COMMUNITY COLLEGE EVENING PROGRAMS IN TEXAS

by

Michael Allen Jackson, Ph.D.
The University of Texas at Austin
1982

Supervising Professor: Donald T. Rippey

Extensive use of part-time faculty in evening community college programs will probably continue. The part-time faculty's perception of leadership and organizational climate may be related to semester retention and mean class grade. This study used a modified version of the Survey of Organizations, a survey based on Likert's meta-theory of organizations, to determine if that relationship exists in classes taught by part-time instructors in six larger community colleges in Texas.

Findings include various relationships to retention and mean class grade. Retention was related to a high level of interest in the welfare and happiness of employees, the extent to which the part-time faculty association has influence on what happens in the instructor's department, the extent to which these instructors do not want to be shown how to improve by their supervisors, and the extent to which part-time instructors would like to be encouraged to exchange opinions and ideas with instructors in other departments. Mean class grade was related to the extent to which information is provided as to what goes on in other departments and as to what goes on when the instructors are not at the college, the extent of trust and confidence the supervisor has in the instructor, the extent instructors would like new ideas for solving job-related problems to be offered by persons in their department or unit, and the extent to which people in their department know their jobs and do them well.

The part-time instructors rated their leadership and organizational climate quite high with little variation in ratings among the colleges (the mean response for colleges ranged from 3.57 to 3.80 on a 5-point Likert scale). Highest

ratings went to supervisors and to items relating to objectives, goals and reasons for hard work. Lowest ratings went to the amount of influence groups such as part-time instructors and students have on what goes on in in the instructor's department. Lower ratings also went to items relating to coordination (between the instructor's department and other departments), teamwork, group problem solving, and participative decision making.

STAFF DEVELOPMENT IN COMMUNITY/JUNIOR COLLEGES: PRACTITIONERS' PERCEPTIONS OF IDEAL CONCEPTS, INSTITUTIONAL EXPECTATIONS, AND CURRENT PRACTICE

by

Veronica Nora de Hoyos Comstock, Ph.D.
The University of Texas at Austin, 1982

Supervising Professor: John E. Roeche

This investigation was designed to study community/junior college staff development practitioners' perceptions of ideal concepts, institutional expectations, and degree of performance (current practice) of competencies for staff development, as well as possible effects of demographic characteristics on these perceptions. These variables represent differenct aspects of role definition for individuals in organizational roles. It is the central thesis of this study that individuals searching for ways to respond to organizational demands, consciously or unconsciously, use their perceptions of aspects of their role definitions in choosing appropriate responses. When an organizational role, such as staff development in community/junior colleges, is ill-defined, the discretion of the role incumbents (the practitioners) becomes a most important variable.

The methodology consisted of modifying an existing survey instrument to gather responses from practitioners. As a reference measure, national experts on staff development theory and practice were also surveyed for perceptions of ideal concepts of staff development practice. Statistical procedures were then applied to create clusters of practitioners and experts for the various analyses of differences among means of practitioner groups, expert groups, and between means of practitioner groups and expert groups. Demographic data were profiled and analyzed for variables which impact practitioner groups importance rankings of the competencies as ideal concepts, institutional expectations, and current practice.

RESULTS

There was little significant difference in the importance assigend to competencies among practitioners and experts. As a result, the subgroups were merged into

one group of practitioners and one group of experts for all comparisons. Practitioners' perceptions of importance differ markedly between ideal concepts and current practice, moderately between ideal concepts and institutional expectations, and little between institutional expectations and current practice. Experts' perceptions of ideal concepts varied little from practitioners' perceptions of ideal concepts. Therefore, experts' ideal concepts differed markedly from practitioners' perceptions of current practice and moderately from institutional expectations.

Demographic data were found to overlap between practitioner groups, thereby precluding identification of individual and institutional characteristics that might signal differences between the practitioner groups and their importance rankings for the competencies.

Given the answers to the research questions and the data base gathered, it was concluded that these results warrant further study to more rigorously describe the aspects of role definition in this study--ideal concepts, institutional expectations, current practice--as well as the possible impact of demographic characteristics on them. Further the influence of experts' perceptions of ideal staff development practice on the above aspects of role definition should also be further explored.

THE FUNCTIONAL ROLES OF DEANS OF INSTRUCTION AND DEANS OF INSTRUCTIONAL TECHNOLOGY IN A JUNIOR COLLEGE SETTING

by

David Hugh Van Antwerp, Ph.D.
The University of Texas at Austin, 1981
Supervising Professor: George A. Baker

The study was designed to examine the functional roles of managers of traditional instruction and managers of technological instruction in a junior college. It was based on the following research questions:

1) What are the functional roles engaged in by middle-level educational managers (deans) in a junior college setting?
2) Which of these roles are stressed by managers of traditional learning systems, and which by managers of technological learning systems?
3) What is the influence of technology, if any, on the differences in role functions of these two types of managers?

General Design. The study was based on Henry Mintzberg's 1969 doctoral research of five chief executives, and used a structured observation. Two deans of instruction and one dean of instructional technology in a multi-campus, urban junior college were observed for one week each. All activities, contacts, and correspondence were recorded and categorized. The results are presented as descriptive data in terms of sums, averages and percentages.

Conclusions. The composite results show that the deans engaged in all of the roles explicated by Mintzberg. Particularly prominent were the role of Leader, and the Informational Roles including Monitor and Disseminator.

The Deans of Instruction acted to a much larger degree in the role of Figure-head, while the dean of Instructional Technology was the only one of the three to act as a Negotiator and spent a larger proportion of time in the Decisional Roles. This Dean did not, however, act as a Distrubance Handler, as the Deans of Instruction were forced to do.

Instructional Technology was found to have an influence on these differences in role emphases on two levels: content and context. The differences pointed toward trends influenced by technology, however, these trends could also apply to other support positions than the Dean of Instructional Technology.

Further conclusions highlighted 1) the importance of transit time, 2) the increasing speed of information processing, and 3) networking patterns within the institution. The results provided implications for current managers, subordinates, institutions, and management trainers.

Finally, the results of the current study were compared to Mintzberg's results. Differences discovered were attributed to three mitigating variables:

1) different organizational levels of the subjects,
2) differences between individuals, and
3) technological changes in the past decade.

THE STRUCTURE OF MATHEMATICS ANXIETY IN A COMMUNITY COLLEGE SETTING

by

Ronald Dale Ferguson
Texas A&M University, December 1982
Chairman of Advisory Committee: Dr. James Rollins

The purpose of this study was to investigate whether there exists a component of mathematics anxiety in addition to the Numerical Anxiety and Mathematics Test Anxiety previously identified by Rounds and Hendel by use of the Mathematics Anxiety Rating Scale (MARS). The essential items defining these two components of mathematics anxiety had been extracted by Rounds and Hendel by factor analysis. Twenty of these items were chosen and augmented by ten additional researcher constructed items intended to measure a mathematics anxiety factor tentatively labeled as Abstraction Anxiety.

The resulting thirty item self-inventory was named PHOBUS and was administered to N = 365 subjects. These subjects were students in eighteen classrooms selected at random from a population of 136 mathematics classes offered during the day division of San Antonio College during the spring semester of 1982. Both principal axis and alpha method were used to initialize factor matrices. Orthogonal rotation by varimax and by equimax algorithms resulted in the isolation of factor patterns that defined five factors.

The first and most important of these factors in terms of contribution to variability was the factor with heavy loadings (greater than 0.5) on the items intended to measure Abstraction Anxiety. The items extracted from MARS were partitioned into Numerical Anxiety, Mathematics Test Anxiety and into two other factors that were loosly labeled as fear of embarrassment and fear of intimidation.

A general linear model procedure was used to determine whether the test-retest reliability compared favourably with MARS. The data did not support that PHOBUS

was as reliable as a 98 item version of MARS. However, PHOBUS compared favourably in reliability with the Spearman-Brown predicted value for the reliability if MARS were shortened to 30 items.

CONCLUSION

The advantages of PHOBUS over MARS lie in the area of ease and economy of administration as well as the presence of another factor of mathematics anxiety. Moreover factor analysis has shown that Abstraction Anxiety is the primary factor in PHOBUS.

Further research using PHOBUS should be directed towards the contribution of Numerical Anxiety, Mathematics Test Anxiety, and Abstraction Anxiety toward dysfunction in mathematics performance. In particular, since adolescence has been identified as a time of emerging differences in mathematics activity when sex is used as a variable, and since the middle school years are also the time of increased abstractness in mathematics, PHOBUS may prove to be useful in determining any significant interactions.

Finally, the identification of three factors of mathematics anxiety and a tool for measuring them offers the possibility for the design of more appropriate treatments in the attempt to ameliorate that anxiety which is detrimental to a subject's performance.

III

DISSERTATION/THESIS TITLES

DISSERTATION/THESIS TITLES

Submitted by

Glenn Ross Johnson
Robert Stalcup

Texas A&M University, 1981-82

Carabin, Robert Jerome. August 1981, Doctor of Education
Chairman: Campbell, Albert B.
An Analysis of Adult Learning and Placement in Community College Entry Level Mathematics Courses.

Patrick, James Arthur. August 1981, Doctor of Education
Chairman: Fellenz, Robert A.
The Effectiveness of the Higher Education Achievement Program (HEAP) at St. Phillip's College: A comparative Study of Student Performance From September 1972 through May 1980.

Metcalf, James Alexander, Jr. May 1982, Doctor of Philosophy
Chairman: Hoyle, J. R.
Student Perceptions of Cognitive Emphasis in Selected Instructional Settings for Introductory Biology in Community and Junior Colleges.

Petty, Kenneth Ray. May 1982, Doctor of Education
Chairman: Householder, Daniel L.
Competencies Necessary for Future Instructors of Two-Year Post-Secondary Drafting Programs (1985-2000).

Spillar, William Thomas. May 1982, Doctor of Education
Chairman: Fellenz, Robert A.
A Comparison of Scholastic Success of Community College Students Admitted on the Basis of Alternative Admission Requirements.

Ferguson, Ronald Dale. December 1982, Doctor of Philosophy.
Chairman: Rollins, James
The Structure of Mathematics Anxiety in a Community College Setting

Carabin, Joan Cook. December 1982, Doctor of Education
Chairman: Beatty, Paulette T.
Determining Cost-Effective Program Promotion Techniques for Adult Vocational Continuing Education in the Community College

Newton, Anne Penney. December, 1982, Doctor of Education
Chairman: Robert Stalcup
Case Studies: An Aid to Trustee Role Enhancement

IV

TAJCCIA RESEARCH TOPICS

RESEARCH TOPICS

Suggested by Instructional Administrators - June 1982.

1. Credit instruction through open broadcast television
   a. Standards-Identify Qualitative Factors
   b. Costs
   c. Effectiveness
   d. On-campus attendance requirements

2. Developmental Courses
   a. Measuring Success and Cost Effectiveness - Evaluating Remedial Courses/Programs
   b. Retention and attrition of those who have received developmental instruction vs those who have not.
   c. Better assessment programs
   d. Illiteracy and its impact on higher education

3. Faculty work schedule
   a. How much time should a full-time faculty member devote to college activities exclusive of the teaching and office hour functions?
   b. How should the time spent in (a) above be substantiated?
   c. Research the frustration-evasion cycle that leads faculty into outside employment beyond reasonable limits.
   d. Percent of time faculty released for research
   e. Outside employment-extent and motivation-effect on teaching?

4. Evaluations
   a. Need for new approaches - Administration, Faculty and Staff
   b. Student evaluations - for what purposes?

5. Salaries
   a. Comparison of administrative and faculty salaries
   b. Influence of "Moonlighting" on professional responsibilities

6. Instructional methods/Design
    a. Self-paced instruction
    b. Feasibility and validity of cooperative experiences for academic program areas
    c. Develop a model for curriculum design and evaluation

7. Staff development
    a. Overcoming faculty resistance
    b. Identify most successful approaches
    c. To meet long range individualized goals
    d. Identify appropriate planning and procedures for implementation
    e. Identify effective techniques for time and stress management.

8. Unions
    a. Identify causes and define preventative measures
    b. Extent of Union association in Texas faculty and impact on instructional programs
    c. What is the future for Texas higher education?

9. Honors Programs
    a. Identify need
    b. Identify effective programs

10. Grading Practices - Standards
    a. Compare grading norms statewide
    b. Compare non-productive grades by program or subject area
    c. Are academic standards declining at community colleges and universities?
    d. What is quality instruction? How can this be promoted?

11. Micro Computers
    a. Development of software for use of instructional administrators

12. Part time Faculty
    a. Utilization of part-time faculty in Texas-Salary, benefits, load, orientation, etc.

13. Academic Affairs Office

    a. Analyze practices in Texas and identify appropriate models

    b. Job satisfactions and frustrations

14. Attitude

    a. Attitude of faculty member toward one's professional responsibilities

    b. Influence on quality of instruction

    c. Is there a marked decline of professionalism? If so, why?

15. Personnel

    a. Why are Boards and Presidents looking outside the district to select key administrative replacements?

    b. Impact of tne "Graying" of Faculty in Texas Community Colleges

16. Institutional Finance - State Survey

    a. What percentageof support is provided from local taxation? From student tuition and fees? What are the implications?

17. What use is being made of the Annual Research Report published by TAJCCIA?

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